

WORLDWIDE AFFAIRS

INTERNATIONAL SEMINAR ON SATELLITE COMMUNICATIONS IN PERU

Peking NCNA in English 1738 GMT 17 May 78 OW

[Text] Lima, 16 May, (HSINHUA)--A 4-day international seminar on satellite communications opened here yesterday, according to local press reports.

Over 300 delegates from Peru, European countries, the United States, Canada and Japan attended the seminar.

Speaking at the opening meeting, Peru's Transport and Communications Minister Elivio Vannini Chumpitazi said that his country's communication departments have made rapid progress over the last 10 years, and the forest areas in the country will soon be included in a microwave network through the satellite communication system.

The minister also dealt with efforts to connect Peru's microwave system with those of its neighboring countries.

He pointed out that the establishment of a subregional satellite communication system is conducive to solving the communication problem among the Andean countries.

It is reported that telecommunication infrastructure has been built throughout Peru. Carlos Romero, director of the National Institute for Telecommunication Research and Personnel Training, said on 12 May that Peru now has a microwave network linking up all the coastal and part of the mountainous areas, which can provide services to television, telephone and teletype. Over 220,000 telephone lines are now in operation. He also indicated that a project for the launching of a satellite for the Andean region is now under study.

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WORLDWIDE AFFAIRS

DPRK ATTENDS NONALINED RADIO-TV EXPERTS MEETING IN ALGIERS

Pyongyang KCNA in English 1020 GMT 19 May 78 OW

[Text] Algiers, 17 May, (KCNA)--A conference of the expert group of the Committee of Radio and TV Cooperation of Nonalined Countries was held in Algiers from 13 to 14 May.

The conference was attended by representatives and experts of our country and many other countries.

Discussed at the conference were problems of strengthening cooperation in radio and TV broadcasting among the nonalined countries and of removing from their countries foreign radio and communication bases which are used against the nonalined movement and national liberation movement and against the progressive movement of the people.

The participants in the conference called for a struggle against the monopoly of developed countries in radio and TV broadcasting and for the elimination of inequality between the nonalined countries and developed countries and establishment of a radio and communication system in the interests of the nonalined countries.

In this connection the conference adopted a document to be submitted to a world radio and communication conference slated in Geneva in 1979.

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WORLDWIDE AFFAIRS

'NCNA' ON HAVANA MEETING OF NONALIGNED COUNTRIES ON INFORMATION

Peking NCNA in English 1307 GMT 21 Apr 78 DW

[Text] Havana, 20 April (Hsinhua)--The second meeting of the Inter-governmental Council for Information Coordination Among Non-aligned Countries closed here yesterday.

The meeting was attended by delegations from the Council's 15 member countries. Delegates from 18 other countries or international and regional organizations were present as observers.

The meeting, which began on April 17, discussed closer cooperation and coordination in news and information among non-aligned countries and the Council's relations with UNESCO. It laid special emphasis on the principle of sovereignty to be followed by all countries in the dissemination of news and information. The meeting decided to take steps to promote news exchange among non-aligned countries, and to work for the establishment of more national news agencies and improvement of communication facilities. The meeting also agreed unanimously to improve the work of the non-aligned news pool.

The Council meeting was called in accordance with a resolution of the 1976 Colombo Summit of non-aligned countries, which calls for the elimination of distorted reporting about the developing countries. Delegates to the meeting accused some industrialized countries of dominating news and information.

It was decided that the third meeting of the Council will be held in Togo.

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WORLDWIDE AFFAIRS

INTERNATIONAL RADIO CONSULTATIVE COMMITTEE OPENS MEETING IN JAPAN

Tokyo KYODO in English 1032 GMT 7 Jun 78 OW

[Text] Kyoto, 7 Jun, KYODO--A total of 350 electricians from 70 countries opened a meeting here Wednesday to study ways to harmonize utilization of their technology on electric waves and establish a new world order in this field.

The 14th plenary meeting of the International Radio Consultative Committee (CCIR), a standing advisory organ to the United Nations specialized body of the International Telecommunications Union (ITU), got under way at the Kyoto International Hall.

The CCIR general meeting, to last about 2 weeks, is the first to be held in Japan.

The technicians are to take up problems pertaining to laser communications, microwave-using Earth-inspecting satellites and other technical innovations at the meeting.

The 66-member Japanese delegation to the assembly was led by Masao Hirano, chief of the Posts and Telecommunications Ministry's Radio Regulatory Bureau.

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WORLDWIDE AFFAIRS

BULGARIAN-TURKISH COMMUNICATIONS AGREEMENT SIGNED

Sofia IMPULS in Bulgarian 11 Apr 78 p 1

/Report on Agreement: "In the Spirit of the Traditional Friendly Relations"

/Text/ The third session of the subcommittee on transportation and communications under the Bulgarian-Turkish committee on economic, industrial, and scientific-technical cooperation took place in Sofia between 5 and 8 April.

The chairmen of the two sides of the subcommittee, Minister of Transportation of the People's Republic of Bulgaria Vasil Tsanov and Minister of Transportation and Communications of the Republic of Turkey Gunes Ongut exchanged greetings at the opening of the session. Minister of Communications of the People's Republic of Bulgaria Pando Vanchev spoke on the current development of the Bulgarian-Turkish cooperation in the field of communications and its prospects for the future. He expressed the desire of the Bulgarian communications administration to develop even more actively the working contacts with the Turkish communications administration in the spirit of the favorable environment and good neighborly relations created during the meeting of the state leaders of both countries, Todor Zhivkov and Fahri Korutjark.

Minister Pando Vanchev expressed our readiness to create rapidly the technical opportunities for accommodating heavy telephone and telegraph traffic volumes across the territory of Bulgaria from Turkey and the Near East to Europe and vice versa, which should be accomplished not only via satellite but also on land. During the plenary sessions all questions of cooperation between Bulgaria and Turkey in the field of communications and transportation were thoroughly discussed.

Two documents were signed on 8 April: the intergovernmental agreement on postal and telegraph services between the People's Republic of Bulgaria and the Republic of Turkey and a protocol on the results of the conversations at the third session of the subcommittee on transportation and communication.

The agreement provides that proper conditions be created until the end of the year for automation of the telegraph communications between Bulgaria and

Turkey and, by the end of 1981, of telephone communications between the major economic and administrative centers of the two countries. Bulgaria and Turkey will direct their efforts toward raising the technical level and quality of communications in order to make it possible to accommodate the load across their territories to Europe or in the opposite direction to the Near East.

The signed intergovernmental agreement records a new phase in the cooperation and the good neighborly relations between Bulgaria and Turkey.

The delegations of the two countries included in the third session of the subcommittee also the Bulgarian Ambassador in Ankara Vladimir Gruncharov and the Turkish Ambassador in Sofia Edzmel Barutchu.

On 5 April the minister of transportation and communications of the Republic of Turkey laid a wreath at the Mausoleum and paid tribute to the sarcophagus of Georgi Dimitrov, the leader and teacher of the Bulgarian people.

Chairman of the Council of Ministers Stanko Todorov received Minister of Transportation and Communications of the Republic of Turkey Gunes Ongut.

The conversation was conducted in the spirit of the traditional friendly relations between the People's Republic of Bulgaria and the Republic of Turkey, and covered the possibilities for further expansion of our contacts in transportation and communication.

The meeting was attended also by Minister of Transportation Vasil Tsanov, Minister of Communications Pando Vanchev, as well as by the ambassadors of both countries, Vladimir Gruncharov and Edzmel Barutchu.

A meeting took place also between Minister of Transportation and Communications of Turkey Gunes Ongut and the Deputy Chairman of the Council of Ministers Andrey Lukanov.

On 5 April Minister Pando Vanchev received Minister of Transportation and Communications of Turkey Gunes Ongut. Their conversation showed their general desire to develop and expand their contacts and cooperation, to consolidate their mutual relationship, which, of course, is of mutual benefit. The meeting between P. Vanchev and G. Ongut was conducted in the spirit of sincerity and friendship. Also present was Turkish Ambassador E. Barutchu.

During the second day of his visit to Bulgaria, Gunes Ongut visited Plovdiv and its new post office building.

The Turkish minister of transportation and communication was accompanied by First Deputy Minister of Communications Engineer St. Markov.

The guests visited also Varna and some of the city's transportation facilities.

WORLDWIDE AFFAIRS

TURKISH COMMUNICATIONS MINISTER GUNES ONGUT INTERVIEWED IN BULGARIA

Sofia IMPULS in Bulgarian 11 Apr 78 pp 1, 3

/Interview with Minister of Communications Gunes Ongut by Yana Konstantinova, IMPULS Correspondent

/Text/ Question: How do you assess your visit to Bulgaria and the agreements signed in the field of communications?

Answer: I was invited to your beautiful country jointly by the minister of transportation and the minister of communications. I would like to thank once more my Bulgarian colleagues for the warm reception and the friendly attitude expressed toward Turkey through me. The sincere meetings with Chairman of the Council of Ministers Stanko Todorov and with Deputy Chairman Andrey Lukanov are proof of the friendship and good faith between Bulgaria and Turkey.

Our friendship considers as one of the first tasks the development of economic as well as transportation and communications ties with the neighboring countries and with Bulgaria in particular. Our bilateral ties in communications are traditional and long-standing. Now, however, they were consolidated with the intergovernmental agreement which we signed here and which opens possibilities for closer cooperation beneficial to both countries and corresponding to our geographic location. Real possibilities exist for Bulgaria and Turkey to become a direct main line in accommodating the long-distance communications volume from Europe to the Near East and vice versa, and this will be very beneficial to both countries. The faster, well-established and more efficient postal and long-distance lines are in accordance with the interests of our peoples and countries, and the agreement signed facilitates their development. We would like the communications agreement to open new ways for some other economic agreements with Bulgaria in other fields as well. The new Turkish government wishes to expand its cooperation and ties much more with the neighboring countries than with those farther away.

Our mutual economic relations are the result of the established communications ties between Bulgaria and Turkey; it is well known that one cannot

achieve any ties and cooperation without the help of communications. And I am particularly satisfied with the intergovernmental agreement signed, which unfolds a beautiful perspective for further expansion of our bilateral working relationship in the important field of communications.

Question: What are your impressions of the country?

Answer: I noticed with pleasure the great progress the country has made in not a very long period of time. I have been here before, although for a short time. My visit to Varna, the chemical plant near Devnya, the harbor of Varna-West and others convinced me personally of the rapid rate of your economic development. I was impressed with the importance you ascribe to tourism, and we would like to expand our cooperation with you in this field as well.

I would like to share with you my wonderful impressions of Plovdiv and the new post office. It is a modern building, equipped with everything necessary, personnel and technology for communications services of high quality and on a contemporary level. The chief of the district communications directorate, Dincho Petkov, is a man fully devoted to his work and I am happy that I met such a devoted communications worker.

I was pleasantly surprised to see name plates in front of every worker on duty at the station. This is like a guarantee for impeccable fulfillment of the obligations and speaks for a new attitude toward the work of the postal and all other communications workers; a new form has been found for raising the service level and I like this idea very much.

In conclusion I would like to send greetings to all communications workers who labor day and night and are day and night at the service of the people.

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## WORLDWIDE AFFAIRS

### BRIEFS

INFORMATION COUNCIL HAVANA MEETING--Pyongyang 24 April (KCNA)--The second meeting of the Intergovernmental Coordination Council for Information of the nonaligned countries was held recently in Havana, according to a pool report. The meeting was attended by delegates from 15 member countries of the Council and delegates from our country and other nonaligned countries and international organizations as observers. The meeting discussed the problems of further developing cooperation among nonaligned countries in the field of information, strengthening the sovereignty of these countries and removing the pressure of the imperialists and adopted relevant resolutions and a final declaration. Documents adopted at the meeting stressed the need to further strengthen the nonaligned news agencies pool, intensify cooperation in the fields of radio, television and telegraph, create more national news agencies, organize journalism courses, oppose the monopolistic domination of information by the imperialists and establish a new international order for information. [Text] [Pyongyang KCNA in English 1027 GMT 24 Apr 78 OW]

TV EXPERTS MEETING IN ALGERIA--Algiers, 16 May (Hsinhua)--The 2-day conference of the expert group of the Committee of Radio and TV Cooperation of Non-aligned countries closed here on May 14, according to a report of APS. The conference was attended by delegates from Algeria, Korea, Cuba, Guyana, India, Iraq, Nigeria, Yugoslavia and Zambia. The participants examined the problem of repartition of the frequency spectrum. A resolution adopted at the conference pointed out that the participants expressed "the will of the non-aligned countries to establish a new and equitable order of frequency spectrum." The resolution also reiterated positive solidarity with radios of the liberation movements and demanded that the equitable rights of the not yet independent countries to use the frequency spectrum be preserved. [Text] [Peking NCNA in English 1508 GMT 16 May 78 OW]

SINGAPORE-VIETNAM NETWORK--Singapore, 1 Jun, (AFP)--The Telecommunication Authority of Singapore (TAS) today announced details of telephone, TELEX and telegraph services to Vietnam available to the public. An announcement said telephone services, resumed on 1 December, last year, were available to any provincial chief town except for Lai Chau, Pleiku, Buon Me Thuot and Phan Thiet. TELEX service, also resumed on 1 December last year, is available to Ho Chi Minh City (formerly Saigon), Vung Tau, Hanoi and Haiphong. TAS said telegraph service was available for any part of Vietnam via Ho Chi Minh City. [Text] [Hong Kong AFP in English 1323 GMT 1 Jun 78 BK]

BULGARIA, LAOS RADIO AGREEMENT--An agreement on cooperation between Bulgarian radio and the National Broadcasting Station of the People's Democratic Republic of Laos was signed tonight by the directors general of the two institutes Boyan Traykov and (Cholen Gonstamank). This agreement was signed in connection with the agreement on cultural cooperation between our two countries signed in Sofia in 1976. It provides for an exchange of materials reflecting various aspects of the political, public and economic life as well as the development of culture and art. [Text] [Sofia Domestic Service in Bulgarian 1830 GMT 8 Jun 78 AU]

HUNGARIAN-LAO RADIO AGREEMENT--Hungarian Radio and Lao National Radio will exchange programs on the occasions of national holidays and other significant anniversaries. This is laid down, among other things, in a cooperation agreement signed in Budapest on Friday by Hungarian Radio president Istvan Hars and Lao National Radio director (Chaieum Vongsam-ANG). The Lao radio delegation was received by Karoly Grosz, head of a department of the MSZMP Central Committee. [Text] [Budapest NEPSZABADSAG in Hungarian 3 Jun 78 p 9 AU]

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TRANSLATIONS ON USSR SCIENCE AND TECHNOLOGY  
BIOMEDICAL AND BEHAVIORAL SCIENCES

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## INTER-ASIAN AFFAIRS

### BRIEFS

INDIA-BANGLADESH AIR AGREEMENT--India and Bangladesh signed an air services agreement in Dacca on 5 May. It was signed by India's High Commissioner K.O.S. Menon and Ghulam Mostafa, secretary of the Bangladesh Ministry of Civil Aviation and Tourism. The agreement provides for operating 30 flights a week on the Calcutta-Dacca-Chittagong sector by the national carriers of each country. [Delhi ISI in English 0841 GMT 6 May 78 BK]

ROC, JAPAN TELEPHONE SERVICE--Taipei, 5 May, (CNA)--Direct-dialing telephone service between Taipei and Japan will start on 1 June, the Chinese Government Radio Administration announced Friday. Telephone subscribers in Taipei may contact receivers in Japan by first dialing "00L" [as received] (International Code), then "81" (Japan's code number), and then the Japanese domestic code before finally giving the telephone number. A direct call between Japan and Taipei will cost NT \$207 for the first 3 minutes, plus NT \$69 for an additional minute. The Chinese Government Radio Administration also plans to open direct telephone service with Hong Kong and the United States soon. [Text] [Taipei CNA in English 1431 GMT 5 May 78 OW]

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## BURMA

### BRIEFS

COMMUNICATIONS PROJECT--Since 1976-77 fiscal year, the communications corporation, with a loan of U.S. \$21 million from the World Bank, has started a communications development project in the country. Training of skilled workers for the project will soon begin and installation of equipment will begin about August. Under the project, automatic telephone exchanges, which can accommodate 17,000 new phone lines and 22,500 new phones, will be installed in 13 cities--Rangoon, Mandalay, Moulmein, Bassein, Akyab, Pegu, Magwe, Taunggyi, Myitkyina, Prome, Lashio, Tourngoo and Meiktila. The project also includes setting up of five radio microwave lines for communications between Rangoon and Mandalay, Rangoon and Moulmein, Rangoon and Bassein; Bassein and Akyab and Moulmein and Tavoy. After the project is completed as scheduled in 1980, direct autophone links will be established between 9 cities--Rangoon, Mandalay, Moulmein, Bassein, Akyab, Pegu, Magwe, Prome and Meiktila. [Rangoon Domestic Service in Burmese 1330 GMT 14 May 78 BK]

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### SATELLITE COMMUNICATION IN THE 1980'S

Madras THE HINDU in English 8 May 78 p 5

[Excerpt] Increasingly, bit-stream processing will be resorted to. A bit-stream processor has the advantage of being able to suppress uplink noise. There is, of course, no storage capability involved.

One interesting development in the offing is the inter-satellite link. Such links can connect users to different satellites in the same or different orbits, without an intervening hop from satellite-1-to-ground-satellite-2. This capability significantly influences the connectivity, capability, coverage, orbit-utilisation efficiency and cost of the system. The frequency ranges most attractive for inter-links appear to be millimetre-wave and optical ranges.

Multiple-accessing is a problem fundamental to satellite communications for it is the means by which wide geographic coverage can be achieved. At present the most prevalent MA system is frequency division (FDMA). By the middle of the next decade, time division (TDMA) and code division (CDMA) will have become more common.

As the transmission mode becomes increasingly digital, error control systems will have to be developed which will be specific to such transmission systems. Forward error correction (FEC) offers a suitable alternative to automatic repeat request (ARQ) used in digital terrestrial communication. It is expected that a hybrid ARQ-FEC system will also find some use.

A number of developments in terminal devices and terrestrial interface and interconnect are taking place which will contribute significantly

to improved communications. As far as India is concerned the first indigenous communication satellite is to be launched within the next 2 years using the European Space Agency's Ariane space launch vehicle. Designated the Ariane Passenger Payload Experiment (APPLE) this would help India to space-quality several components.

Being an experimental system, APPLE will necessarily be less advanced than the commercial foreign satellites now available. It will, however, pave the way for more advanced systems, embracing the developments outlined above. At the current state of research and development, it should be possible for India to develop a sophisticated satellite-based communication system by 1985-1990, at the latest.

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## SATELLITE WILL NOT BE USED FOR SPYING

Madras THE HINDU in English 5 May 78 p 12

[Text]

BANGALORE, May 4. The Union Minister for Petroleum and Chemicals, Mr. H. N. Bahuguna, said here to-day that India had no intention of spying on other nations through its satellite programme which was meant to give a new life to our own people.

Inaugurating the indigenously designed and developed thermovac chamber used for environment testing of satellite and satellite subsystems at the ISRO Satellite Centre at Peenya near here. He said the intention of India in launching satellites was to explore the availability of natural resources in various fields and use them for the betterment of the people.

The thermovac chamber has been developed by the joint efforts of three Government of India organisations—Indo-Burmah Petroleum Company (IBP), Bhabha Atomic Research Centre (BARC) and the Indian Space Research Organisation (ISRO) Satellite Centre.

Mr. Bahuguna commended the efforts of the three organisations and described it as 'one more step for to-morrow's hopefulness and aspirations.'

The Union Minister also laid the foundation-stone for the second thermovac chamber, bigger than the one which was inaugurated to-day.

The Karnataka Chief Minister, Mr. D. Devaraj Urs, who presided, said the development of the cham-

ber proved the capability of the Indian scientists and expertise.

Prof. U. R. Rao, Director of ISRO, said the Indian space programme was based on the firm belief that through purposeful, selective and imaginative utilisation of advanced technology "we can provide unique inputs into the process of national development."

Space platform, he said, provided the inherent capability to observe synoptically large areas of earth. "This global view of the earth provides valuable information on oceanography, mineralogy, geology and cartography which are essential not only for optimal management of the existing resources but also to discover new resources," he added.

Prof. Rao said the experience gained through the first satellite "Aryabhata" had given ISRO the necessary confidence to go ahead with the development of more complex application spacecraft.

Prof. S. Dhawan, ISRO Chairman, said the development of space technology helped India to enhance its capability in various field including communication and industry.

The space organisation worked "extremely closely" with the industry and many other institutions in the country, he said and added that the development of thermovac chamber had greater implication in the area of vacuum technology.

—UNI.

## TELEPHONE CONVERSATIONS BY WAY OF EXPERIMENTAL SATELLITES

Madras THE HINDU in English 1 Jun 78 p 9

[Text]

FROM OUR SPECIAL  
CORRESPONDENT

NEW DELHI, May 31.  
Three major earth stations, located in Madras, Delhi and Ahmedabad, are currently taking part in the Satellite Telecommunication Experiments Project (STEP), a feature of which is the routing of telephone conversations via earth-orbiting satellites. Telephone conversations originating in Ahmedabad and Ajmer are already routed through the Franco-German satellite, Symphonie, located over the equator.

While international telecommunications through satellite have been established in India for quite sometime now, trials for the first time are going on in the use of satellite for domestic communications.

STEP, a joint project of the Indian Space Research Organisation and the Indian Posts and Telegraphs Department, has completed one year to-day. This experiment uses the Franco-German Symphonie which has been made available for a period of two

years. STEP has been designed to enhance indigenous capabilities in the design and development of equipment for satellite telecommunication as well as to improve the country's capabilities for operating a satellite telecommunication network.

The results of STEP are expected to yield useful parameters for India's domestic satellite communications systems, embodied in the "INSAT" (Indian National Satellite) scheduled to become operational by 1981.

Besides the three major earth stations located at Madras, Delhi and Ahmedabad, there are two mobile terminals one of which is jeep-mounted and is called the Emergency Communication Terminal (ECT). This terminal could be moved to any place where communication is required at a very short notice. The first field trial of ECT was done at Vijayawada immediately after the cyclone to provide emergency communication between All India Radio stations in Vijayawada and Delhi, using Symphonie and the STEP earth station at Delhi. The other mobile terminal, called

Transportable Remote Area Communication Terminal (TRACT) is mounted on a truck. This terminal is at present located in Ajmer.

Telephone exchanges at Ahmedabad and Ajmer are connected via satellite through respective earth stations. At present trials are under way between Ahmedabad and Ajmer using a recent technique called Single Channel Per Carrier (SCPC) suitable for remote area communications. Apart from this, experiments on linking the radio network between Delhi and Ahmedabad are also going on for the last one year and listeners in Ahmedabad are receiving their morning and evening news bulletins via the satellite.

In the coming year it has been planned to conduct several experiments in the field of digital communications and operations of TRACT and ECT. The required equipment and earth stations for these experiments have been designed, developed and fabricated by the Space Application Centre, Ahmedabad, Telecommunications Research Centre of the P and T, New Delhi and the Indian Telephone Industries, Bangalore.

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INDIA

BRIEFS

TV NETWORK--The TV network in the country now covers 9.8 percent of the rural population. Minister for Information and Broadcasting L.K. Advani in a written reply informed the Rajya Sabha that on completion of the proposals the coverage of rural population will go up to over 23 percent. [Delhi Domestic Service in English 0240 GMT 5 May 78 BK]

TV TRANSMITTER INAUGURATED--The 15th Durdarsan transmitter in the country was inaugurated in Sambalpur, Orissa, on 30 April by Information and Broadcasting Minister L. K. Advani. The 100 meter high tower will cover an area of 5,000 square kilometers. [Delhi Domestic Service in English 0240 GMT 1 May 78 BK]

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## INDONESIA

### BRIEFS

TELEVISION RELAY STATION--The construction of a television relay station in Dili, East Timor, is expected to be completed this year, the head of the Information Department Office in East Timor said. He said that a number of Indonesian Television [TVRI] officials and experts will arrive in Dili shortly to assist the construction of the station. When completed, the station will boost the spirit of the local people in carrying out development of the province. [Jakarta Domestic Service in Indonesian 2300 GMT 2 May 78 BK]

MICROWAVE NETWORK--Ampenan, 3 May, (ANTARA)--Long distance telephone communications through the East Indonesia Microwave Network is expected to be ready for operation this year, according to the Telecommunications Office in Denpasar. The East Indonesia Microwave Network will serve long distance telecommunication links especially those which are still beyond the reach of the Palapa Domestic Satellite Communication System. Microwave terminals in East Indonesia will be equipped with repeater stations such as those now being tested at the terminals of Bakan (Lombok) and Jorongkoak (Sumbawa). The microwave terminals in the Eastern parts of the country are located in Denpasar, Ujungpandang, Mataram, Sumbawa Besar, Bima and Ruteng (East Nusatenggara). [Text] [Jakarta ANTARA in English 0733 GMT 3 May 78 BK]

KRAWANG AUTOMATIC TELEPHONE EXCHANGE--The automatic telephone exchange at Krawang Regency, West Java, will be operational from 1 June. With the completion of the Krawang automatic exchange, there now are four automatic telephone exchanges in West Java--in East Bandung with 2,200 lines, in North Bandung with 2,800 lines and in West Bandung with 1,000 lines. [Jakarta Domestic Service in Indonesian 0700 GMT 31 May 78 BK]

TELEVISION RELAY STATION--The people of Ternate since 30 April have been able to watch clearer television pictures carried by the central television broadcasts thanks to the erection of a TVRI [Televisi Republik Indonesia] relay station which has a capacity of 100 watts. The relay station, inaugurated by a high-ranking information department official recently, is a temporary one pending the erection of a permanent relay station. [Jakarta Domestic Service in Indonesian 1500 GMT 8 May 78 BK]

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JAPAN

BRIEFS

ALLOCATION OF FM WAVES--Tokyo, 23 May Kyodo--Posts and Telecommunications Minister Yasushi Hattori told the Broadcasting Council of the Kyodo News Service Tuesday that allocation of FM waves will be increased shortly. Hattori, speaking to the Management Committee of the council at the Aoi Kaikan in Minato Ward, said three problems would have to be solved before allocation of FM waves could be increased. These were interference, the choice between wide-diffusion or local stations and transmission to remote areas, he explained. He said he planned to open up FM waves by starting multiplex broadcasting in the very near future. The minister also said he was thinking of asking the Liberal-Democratic Party's Election System Council to study the use of more radio and TV broadcasting in public elections. [Text] [Tokyo KYODO in English 0546 GMT 23 May 78 OW]

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PEOPLE'S REPUBLIC OF CHINA

TIBET HOLDS MEETING PREPARES PLAN ON RADIO, TELEVISION

Lhasa Tibet Regional Service in Mandarin 1100 GMT 18 May 78 OW

[Excerpts] A discussion meeting on broadcasting work in the Tibet Autonomous Region was recently held in Lhasa. The meeting discussed and drew up the 1978-1985 Regional Development Plan for radio, television and other related scientific endeavors.

Tien Pao and Je Ti, secretaries of the Regional Party Committee, and responsible comrades of the propaganda department of the Regional Party Committee were present at the meeting. Comrade Tien Pao delivered a major speech. Also attending the meeting were responsible comrades of the Propaganda Departments of all prefectural and municipal party committees and prefectural broadcasting administrative bureaus.

To improve radio listening for the masses, the meeting formulated policies and tasks for developing radio broadcasting and rural wired broadcasting networks, taking into consideration the region's special conditions such as its vast area, high mountains and scattered population. The meeting also called for developing television quickly and studying broadcasting science and techniques. The meeting also called for realizing step-by-step the modernization of broadcasting science and techniques.

The regional party committee attached great importance to this meeting. Comrade Tien Pao delivered a report on the situation and the implementation of the party's policy. He issued important instructions on how to run broadcasting well. Comrade Je Ti spoke at the meeting. He said, "This meeting has drawn a blueprint for the development of radio and television in our region."

At the meeting, a comrade of the Nachu Prefectural Radio Station introduced its deeds in developing broadcasting by self-reliant efforts and a hard-working spirit. The meeting also discussed and instituted a system of individual responsibility and a variety of rules and regulations concerning radio and wired broadcasting.

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

AMERICAN ENGINEER--Peking, May 25--Liu Yin, vice-president of the Chinese Society of Electronics, yesterday gave a dinner in honor of Dr Yang Fang, senior engineer of International Business Machines (IBM) of USA, and his wife Ming-bo Hu Fang, and had a cordial conversation with them. Dr and Mrs Fang arrived in China on April 29 to visit their relatives, pay a visit to China and make academic exchanges. They were welcomed at a dinner given by Yueh Tai-heng, deputy general manager of the China International Travel Service. [Text] [Peking NCNA in English 1503 GMT 25 May 78 OW]

HUPEH COMMUNICATIONS MEETING--A total of 1,000 staff and workers of Hupeh's communications system held a meeting on 7 June to hail Chairman Hua's inscription for the national conference of the communications system on learning from Taching. (Wang Nien-tung), deputy secretary of the provisional party committee of the provincial communications bureau and deputy chief of the bureau, read Chairman Hua's inscription. Responsible comrades of the industry and communications political revolutionary committee and (Chu Hsiao), deputy secretary of the provisional party committee of the provincial communications bureau and deputy chief of the bureau, spoke at the meeting. [Wuhan Hupeh Provincial Service in Mandarin 1100 GMT 10 Jun 78 HK]

SHANGHAI ELECTRONICS GROUP--Shanghai, Jun 1--A group of 180 middle and primary school students who show an aptitude for electronics technology have been admitted to a young electronics enthusiasts' association set up recently in Shanghai. The purpose of the after-school association is to help the children develop a love for science and begin studying and using it at an early age, laying the foundation for scaling the heights of science later. Chen Han-kuei, vice-president of the Shanghai Electronics Association, is the young people's advisor, and several fellow researchers give technique guidance in automation, electronic computers, remote control and measurement, radio and television. All 11 children palaces in Shanghai and more than 60 middle schools have sponsored electronics training classes for enthusiasts. [Peking NCNA in English 1235 GMT 1 Jun 78 OW]

SHANTUNG SWITCHBOARD--In Shantung province, Tzupo municipal postal and telecommunication building successfully installed a 3,000-unit crossbar-system automatic telephone switchboard, which is at present the largest automatic telephone switchboard in Shantung, and put it into operation on 24 April, 1978. [Tsinan Shantung Provincial Service in Mandarin 1130 GMT 4 May 78 SK]

CSO: 5500



## FIRST PHASE OF ASEAN CABLE NETWORK NEAR COMPLETION

Kuala Lumpur BUSINESS TIMES in English 18 Apr 78 p 11

[Article by Christopher Saint in Singapore]

[Text]

CALLERS in the five Asean member countries will eventually be able to lift their phones and dial directly any number in their capital cities through a region-wide cable system. And, while the individual governments involved are looking at the security and profit aspects of the Asean cable network, two cable-laying ships are already approaching each other in the nearly 1,500-mile distance between the first two communication centres.

The S\$113 million (US\$49 million) Singapore-Philippines link of the system, the first to be scheduled by

the five-nation partnership, will provide 1,380 telephone circuits between the two countries. Capable of carrying all types of telecommunication traffic including telephones, telex, telegram and data broadcast, the 1,450 nautical miles phone connection is expected to be completed by June. Installation began in December 1977.

But the concept of an Asean underwater cable link jelled back in March 1975 when the Asean Permanent Committee on Land Transportation and Telecommunications agreed to study the feasibility of a uniquely regio-

nal telecommunications link based on underwater cables. Groundwork was completed in 1976 during meetings in Kuala Lumpur and Bangkok. The memorandum of understanding for the construction of the cable network was signed in December 1976 and the contract for supply of the cable was awarded in May last year.

Commissioning of the first link between Singapore and Currimao, Ilocos Norte in Northern Luzon will be in June and the completion dates of the other segments of the Asean Submarine Cable Network run through

1982. The Indonesia to Singapore cable is to be installed at an estimated cost of S\$50 million (US\$22 million) by 1979. The Singapore-Malaysia-Thailand cable is to be laid at an estimated cost of S\$64 million (US\$28 million) by 1980 and the Philippines-Thailand link, the most expensive at an estimated S\$148 million (US\$64 million), is to be in by 1982 for a total cost of S\$378 million (US\$164 million).

When completed the network will connect with other international systems to make nearly first class the quality of communications ser-

vices between this region and the world, according to a Singapore Telecommunications Authority spokesman. But another more significant benefit, he says, will be the establishment of regional direct dialing services at a relatively low tariff among member countries.

It will be like the Subscriber Trunk Dialing service presently available between Singapore and Peninsular Malaysia. Anyone in Singapore will be able to pick up his telephone and dial directly a friend or business colleague in Jakarta, Manila, Bangkok or Kuantan — as the

Singapore-Thailand link does a stopover in that east coast Malaysia city — as easily as he can reach Kuala Lumpur today, says Telecoms general manager, Mr Goh Seng Kim.

What the partners do not point out is that international communications in many of these countries, especially Indonesia with its uncountable 12,000 islands and horrendous communications problems, will likely restrict the direct dialing dividend to the major cities.

Still the technological benefits of the network are expected to make it all worthwhile. Accord-

ding to Telecoms authorities, the cable is most useful with the transmission of television and high frequency data broadcasts, two services which are increasingly useful in the fields of commerce and security.

Singapore is picking up as much as one-third the cost of the installation and will benefit by monopolising one-third of the circuits in the Singapore-Philippines link. The breakdown on the other shares is not yet available and there are two international telecommunications services also involved in the project. Shares in costs and circuits have been

based on the estimates of usage of the system and as evident in the grid chart the Republic foresees itself as the central exchange in the entire network.

According to the Telecoms spokesman, Singapore stands to profit from such a service, both directly from the payments for exchange services and indirectly from the point of view of overall prestige.

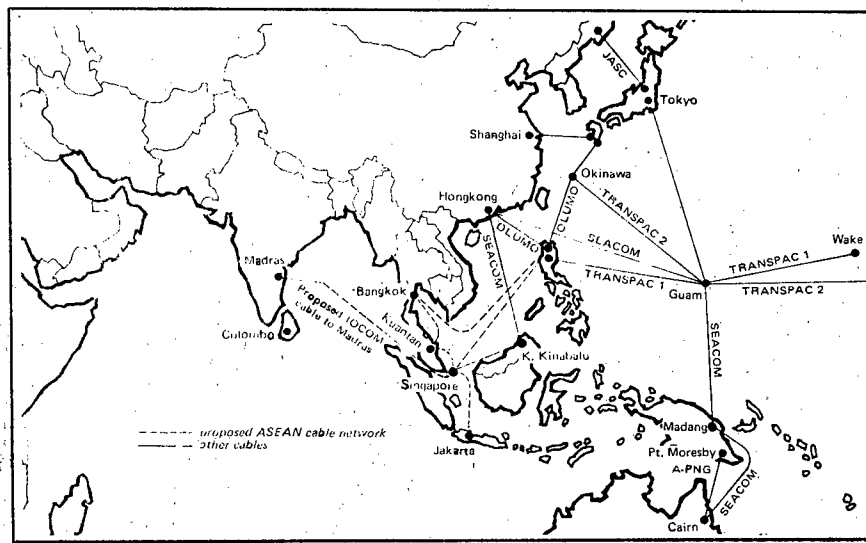
Although the Republic is currently agreed to a fifty-fifty share of the

proposed 500-mile Singapore-Indonesia link to be completed sometime by 1980, it is anticipated that the final accounting will find Telecoms the majority partner if only in the volume of calls placed over the system.

The entire project, initially pushed by Singapore in its national effort to develop its name in the telecommunications business, will set the Republic well in control of the transmission traffic throughout the area. And

as central exchange for the regional network Singapore will, in turn, become more important to other international cable systems including Transpac and Seacom, both Pacific cables linking Asia with the US.

A further extension of this programme already planned by Telecoms is the proposed IOCOM cable to Madras from the Republic, both linking the Asean cable to the subcontinent and through that direct to Europe. — *Depthnews*



CSO: 5500

## BULGARIA

### VARNA JOURNALISTS COMPLAIN ABOUT POOR TELEPHONE SERVICE

Sofia IMPULS in Bulgarian 11 Apr 78 p 3

[Article by Khristo Debrev: "The Journalist and the Telephone"]

[Text] The impressions of some Varna correspondents of the Sofia mass media are only opinions and do not pretend to theorize or generalize. We must, however, add something else to those preliminary words. It is well known that speed is the quality that every journalist must possess and that without it his work is sometimes unthinkable. Even one minute's delay can be fatal at times. But this quality is impaired when the respective communications facilities do not render assistance. And exactly for this reason the correspondants do not think that the collective body of the district directorate of communications is doing them any favors. The joint work of the communications facilities and the journalists first of all serves one and the same goal. An important party goal.

We are happy that the correspondents evaluate in this manner the work of the district directorate. This "evaluation" however leads to some critical remarks and praises which, we hope, will be taken into consideration by the directorate as well as by the trade unions of the Varna communications directorate. Here are the impressions of some of our colleagues.

Leon Adzheman, correspondent of BTA. The telephone numbers in our offices were changed three times. The telephone connection was poor. Besides, a change of this character reflects upon our work. Direct dialling in Sofia is an old headache. Very difficult.

I have the impression that the teletype service does not check sufficiently the telephone connections. No preventive measures are taken either. Encouraging is the fact, however, that whenever I call the service, the operators are very accurate and everything is taken care of.

This year the subscription to the different editions of BTA was very good. One suggestion: do not bring two or three packages to the subscribers simultaneously. And one wish: find a way to issue invoices for stamps we have used.

Georgi Sveshtnikov, correspondent of Radio Sofia. I must call Sofia at least 20 times daily, especially during the summer. I must admit that direct dialling creates unusual difficulties. Number 02 is usually overloaded, while number 92 disconnects prematurely about 90 percent of the calls.

I am impressed by the very good work of service telephone No 14. Any time of the day or night the women operators have given me the required telephone number. In fact I would like to praise the telephone operator answering No 5. Her work is beyond reproach.

Lately the city telephone network has been overloaded as well. It is very difficult to dial a Varna telephone number and often the conversations are crossed. I listen somebody else's conversations and probably they listen to mine. There is no privacy.

I am serviced by 5th post office branch. I can say that the women who work there are devoted workers. If one could only arrange, however, to have the newspapers come earlier.

Peter Gerchev, correspondent of National Front. Unfortunately even the correspondents are restricted when subscribing to the necessary periodicals. It so happened that this year I will not be able to read some of the scarce magazines which interest me. I think that we should have some priority. As concerns the telephones, they are everybody's headache, although it may be good to call attention to the Sofia operators. Quite often, while telephoning my reports, the editor's office cuts off my conversation, for the reason that they have an out-of-town call waiting. Thus, I have to call the stenographer several times, wasting my time as well. Why do they have to interrupt my call, once my colleague from out-of-town end and I do the same work. Or, do we also have to work under the system of "placing a call?"

A number of international events of world-wide importance take place in Varna and our post office employees have amazed me many times. In a matter of seconds one could get in touch with all continents. Everything could be achieved under good organization.

I have no intention whatsoever to comment on the opinion of my colleagues, as everybody is connected to a certain degree with the district directorate of communications and its service divisions. I join them in their opinion on telephone services, as I have the same headache. But I found a solution: I call the editor's office after 1700.

I often receive letters with just this address: Varna, The Correspondent of TRUD. The letters arrive at my house without any delay. I do not know whom to thank. Interest in TRUD increased tremendously during recent years and we have serious difficulties with the circulation department employees. However, they always call me and together we settle the subscription limitations and in this manner have kept the subscriptions of the workers.

I have expressed more than once my appreciation of the attention and respect they show toward our newspaper. Let me use the pages of IMPULS as well in order to thank them again and express the hope that their work load could be somehow lightened.

I visit branch 10 several times a month. The employees of the finance department have always been polite and helpful. I do not know them personally, but I know that they service everybody efficiently and courteously. Therefore, I will be very happy if they enjoy the appropriate attention on the part of their superiors. And I am not saying it in order to be polite.

Obviously the impressions of my colleagues are not scant. It will be most wonderful if the district directorate of communications in Varna and the trade unions familiarize their employees with them. Let us hope that they will serve as reward and lesson as well.

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## INTER-AMERICAN AFFAIRS

### BRIEFS

NEW RADIO ORGANIZATION CREATED--Buenos Aires, 2 Jun--The Ibero-American Voice Broadcasting Organization [Organizacion Iberoamericana de Radio-difusion Sonora] (OIR), has been created in this city. The main objective of this organization, which groups representatives of over 150 Latin American and Spanish radio stations, is to increase cultural exchange and disseminate the traits and values of the various people of the continent. [Buenos Aires Noticias Argentinas in Spanish 2350 GMT 2 Jun 78 PY]

CSO: 5500

## BRAZIL

### ALL VESSELS TO BE EQUIPPED WITH SATELLITE COMMUNICATIONS IN 1981

Sao Paulo FOLHA DE SAO PAULO in Portuguese 17 May 78 p 10

[Text] Commanders of seagoing vessels and shipping agencies are pleased with the news that starting in 1981 all Brazilian ships will use satellites to maintain contact with other parts of the world. The satellite system will replace radio frequencies. The only means of communication presently in use, the latter is subject to weather interference and problems with transmission.

Arthur Sandoval Contente, commander of the Brazilian ocean ship "Petropolis," praised the initiative of EMBRATEL [Brazilian Telecommunications Company] in adopting the system. According to Contente, the ship's radio telegrapher often finds it difficult to communicate with other parts of the world, mainly with Japan.

The captain said the system of radio communications encountered a series of difficulties, foremost among which is the occurrence of the so-called zones of silence, locations where it is considered impossible either to transmit or receive messages, which really hampers naval operations. According to Jose Manoel de Souza Filho, the radio telegrapher aboard the "Petropolis," Brazil's major zones of silence are located in Ilha Granda, Rio de Janeiro, and near Recife, in Pernambuco. Abroad, the telegrapher noted the same phenomenon in the vicinity of the Canary Islands and the Island of Cape Verde.

#### Speed and Economy

With the installation of the satellite communications system the problem will tend to disappear, as will the excessive telephone costs. As is known, a great many ships manage to communicate with all parts of the world by telephone, but this system is criticized as financially burdensome for the shipping companies.

As the commander and the radio telegrapher of the "Petropolis" explained, with the passage of time and its subsequent improvement, the adoption of the satellite communications system will also serve to find the ships, position by satellite. The crew members say that ships equipped with this

system know their locations with what they consider a minimum margin for error, seldom exceeding 50 meters.

Sounded out on the EMBRATEL project, several shipping agencies were unanimous in stating that it should be supported by all sectors connected with maritime trade, "because we will be able to obtain financial and business information with extraordinary speed."

#### Change

The change in the system will be effected by launching satellites created especially for maritime communications by an international consortium with which EMBRATEL became affiliated in London, acquiring 1.5 percent of the stock, valued at \$3 million.

In the beginning, the International Maritime Satellite Organization [INMARSAT] system will have four satellites in orbit, one in reserve and the others covering the Atlantic, Pacific and Indian Oceans. In Brazil, INMARSAT operations will require that small parabolic antennae be installed on the ships. Prototypes of this equipment are being developed by the navy, and the models will be manufactured with domestic technology.

With one of the five largest merchant fleets in the world, Brazil will make extensive use of this system, principally on medium and long distance voyages. According to EMBRATEL technicians, the system has operational advantages, notably the cost savings that will result from reliable communications, since interrupted contact is common in communications by radio.

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CSO: 5500



BRAZIL

# PRESSURIZATION OF RIO TELEPHONE CABLES TO BE COMPLETED IN 1981

Rio de Janeiro O GLOBO in Portuguese 17 May 78 p 10

[Text] TELERJ [Telephone Company of Rio de Janeiro] announced yesterday that a plan is being implemented to upgrade the entire cable system of Rio. Completion is expected in 1981, when the cables will be pressurized. The project includes repair, insulation and pressurization of the cables, and their orderly arrangement in underground vaults, where dozens of them are now interlaced in a tangle that makes the technicians' work harder.

The pressurization operation consists of injecting dry air into the cable at 10 pounds pressure per square inch, which will prevent the penetration of water or humidity. Some 195 cables are already being serviced, and TELERJ plans to pressurize another 186 of the 718 cables in Rio by the end of next year. Although the work is being intensified, there is still an average of over 18,000 malfunctioning telephones per day, or 2.5 percent of the telephones installed in the city, according to the company.

Yesterday, responding in writing to the questions that had also been submitted in writing, as it had requested, TELERJ announced that it intends to renovate 42.5 km of cables this year, replacing those which are defective. Another plan in execution involves wrapping the joints--where the cables are spliced--with thermo-contractile material for mechanical and electrical protection. This material is already being used, primarily in the foundations of the Metro works.

The splices are the most vulnerable points of the underground vaults, where most of the defects in the network occur. According to the company, a new arrangement of the boxes is being made to correct this; all the cables will be supported and arranged in such a way as to permit repairs without causing further damage.

Five groups of technicians yesterday conducted repairs and extensions of telephone cables in Botafogo. The teams worked on the following streets: Rua Sao Clemente (two), Real Grandeza, Voluntarios de Patria and Principado de Monaco. The team that worked on the corner of Real Grandeza and Voluntarios da Patria said they are replacing a cable for station 266,

to serve 200 subscribers. In the Praia de Botafogo, in front of Sears, another team repaired a cable that serves over 1,200 subscribers.

Two teams were operating in Rua Visconde de Niteroi, the first in front of the Mangueira offices and the other near the old building of the Salgado Filho Hospital, where new tunnels are being constructed.

In Campo de Sao Cristovao, three young men have been working since Monday, laying cable for 2,400 phones, in addition to correcting some defects. On Rua Bartolomeu, in front of the Quinta da Boa Vista, another group repaired cables affected by water penetration, which caused problems for 1,800 subscribers.

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BRAZIL

BRIEFS

BRAZILIAN-ARGENTINE MICROWAVE TRUNK--Foreign Affairs Minister Azeredo da Silveira, Communications Minister Quandt de Oliveira, Gen Jose Antonio de Alencastro e Silva, president of TELEBRAS [Brazilian Telephone Company], and Engineer Heroldo Correa de Mattos, president of EMBRATEL [Brazilian Telecommunications Company], are among the officials who will attend the upcoming ceremony inaugurating the microwave trunk which will link Brazil and Argentina through this long distance communications system. The ceremony will take place tomorrow, 17 May, at 2000 hours in the auditorium of the Communications Ministry, with Brazil's foreign affairs minister presiding. The presidents of TELEBRAS and EMBRATEL have invited journalist Edison Sid Varila to attend the ceremony, and the superintendent of the Associates in Brasilia will be present. With the inauguration of the new trunk, communications between Brazilians and Argentines will become even easier, just in this period of closer harmony between the two countries, represented by the World Cup Soccer competition, scheduled for June. [Text] [CORREIO BRAZILIENSE in Portuguese 17 May 78 p 16] 6362

CSO: 5500

## VENEZUELA

### BRIEFS

POWERFUL GOVERNMENT STATION--Caracas, 16 May, (VENPRES)--A broadcasting station with the largest coverage in Latin America will be set up in the area of Paraguana, Falcon State, in northwestern Venezuela, with 1,000-kilowatt power. The announcement was made by Venezuelan Information and Tourism Minister Celestino Armas who said the station, which is to be state-owned, might cover countries of the Caribbean, Central American and Andean Pact areas. The estimated time lapse for the first test is 10 months and the total cost, including equipment, installation and land, will be of about 15 million bolivares. [Text] [Caracas Diplomatic Information Service in Spanish 1205 GMT 17 May 78 PA]

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## INTER-ARAB AFFAIRS

### BRIEFS

ISLAMIC NEWS AGENCY MEETING--Jidda, 21 May, SNA--The Executive Council of the Islamic International News Agency unanimously approved this morning the communications project of the agency which will enable it to start transmission shortly, in not more than a few months' time. It also approved the agency's new budget and reappointed Safdar Ali Qurayshi as director general for 4 years. [Riyadh SNA in Arabic 1135 GMT ]1 May 78 LD]

CSO: 5500

## AFGHANISTAN

### BRIEFS

LOAN FOR AFGAN TELECOMMUNICATIONS--A \$8-million loan agreement from the Islamic Development Bank to finance equipment and creation of a ground station for international communication, telephone, telegraph, telex as well as exchange of television programs via statellites was recently concluded between an Afgan delegation and the Islamic Development Bank officials in Saudi Arabia. [Excerpt] [Kabul in Dari to Europe 1230 GMT 22 Apr 78 LD]

CSO: 5500

ALGERIA

RESOLUTION OF FRONT INFORMATION MINISTERS

Algiers APS in French 1100 GMT 19 Apr 78 LD

[Text] The Conference of the Information Ministers of the Arab Resistance Front held in Algiers on 17 and 18 April 1978 adopted the following resolutions:

In accordance with the decisions made within the framework of the action plan for the information field adopted by the Second Summit Conference of the Arab Resistance Front held in Algiers on 2, 3 and 4 February 1978;

In implementation of the resolutions adopted by the ministers of foreign affairs and defense of the countries of the Arab Resistance Front at their conference held in Damascus on 19 and 20 March 1978;

The ministers of information of the Arab Resistance Front held a conference in Algiers on 17 and 18 April 1978, and made the following decisions:

I. Press Agencies

1. To establish permanent contacts among the press agencies of the countries of the Arab Resistance Front and make immediate endeavors to set up information networks among these agencies and eventually achieve more efficient cooperation in the field of radio information and photography.
2. To set up an office of each press agency in the capitals of the Front member countries. The offices will publish information bulletins for organizations, enterprises and private individuals;
3. To give to these offices every technical and administrative facility necessary to fulfill their tasks;
4. To strengthen those press agencies which do not have sufficient means at their disposal in order to enable them to achieve the Front's goals in the information field;

5. To make use of news transmitted by the press agencies of the countries of the Arab Resistance Front and by the Palestinian Press Agency WAFA, and to use these agencies for transmitting all information concerning the front members.

## II. Radio and Television

1. To exchange television news items concerning everyday activities in the front countries;

2. To develop exchanges among the radio and television offices in the Front member countries in the field of national production;

3. To give particular emphasis to the production of television and radio programs devoted to the Palestinian resistance movement;

4. To produce periodically a joint radio program as the Voice of Teharab Resistance Front;

5. To produce television programs in coproduction with other Front countries and insure that they are broadcast in member countries;

6. To produce television documentary films emphasizing the resistance of the Arab peoples in the occupied territories, as well as the realities of the Arab-Israeli conflict and the racist and expansionist character of the Zionist movement;

7. To exchange technical knowledge in the field of radio and television, and work for coordination in radio frequencies and telecommunications by means of satellites.

## III. Publications

1. To publish and distribute in the member countries the most important publications, papers, magazines and books appearing in these countries, and eliminate all obstacles and difficulties hindering exchanges;

2. To develop the PLO Research Center and the ARD Institute for Palestinian Studies in Damascus;

3. To publish pamphlets in foreign languages explaining the aims of the Front as well as its position on various issues, with the parties concerned in the front supervising the publication;

## IV. Film Industry

1. To develop film production in coproduction with the Front countries and organize an exchange of films;

2. To give priority to films produced in the Front member countries.



## V. Conferences

1. To organize a series of international meetings with international writers and journalists known for their friendly attitude to the Arab cause and the Palestinian resistance;
2. To send joint missions of information to nonaligned countries, Third World countries and other friendly countries in order to explain the correctness of the Front's position on topical national issues such as the new situation in southern Lebanon;
3. To exchange delegations representing the information sector and mass organizations among Front countries, as well as workers organizations and trade union in other foreign countries;
4. To invite the Front members to hold a conference for progressive intellectuals and Arab nationalists devoted to the movement of Arab liberation under the present circumstances. The host country will organize a preparatory committee so that the conference can be held in 1978. Other member countries will give any help judged necessary by the preparatory committee;
5. To organize on 5 June 1978 a week of solidarity with Palestinian prisoners in the occupied territories;
6. To organize cultural weeks in the front countries in order to deepen the knowledge of the cultural life of the countries;
7. To organize a cultural festival of the front countries;
8. To hold periodic meetings of managers of press agencies, chief editors of daily papers, leaders and writers' unions and managers of film industry in the front countries in order to develop cooperation and harmonize positions. The chief editors will meet in Damascus, the Writers Union in Tripoli, the managers of film industry in Algiers and the managers of press agencies in Aden;
9. To support the Egyptian progressive intellectuals struggling to make the voice of Egyptian patriotism heard;
10. To emphasize the struggle of the people of western Sahara for their right to be independent, laying particular emphasis in the information field on the struggle of African peoples.

CSO: 5500

SECOND EARTH DISH PLANNED FOR COUNTRY

Manama GULF WEEKLY MIRROR in English 27 May-2 June 78 p 4

[Text]

BAHRAIN is to have a second earth satellite dish. The multi-million pound project, already out to tender, will be built within yards of the island's existing dish.

The new 105-foot diameter structure will mean that Bahrain can link into the Atlantic telecommunications satellite. The present dish, built in 1969, is trained onto the Indian Ocean satellite — and if that satellite goes wrong, it means a communications failure.

"We have decided to install the second dish because of the huge growth of international telephone and telex traffic in Bahrain," said Mr Basil Leighton, Cable and Wireless's regional director for the Arab world.

"We believe that the small dish earth stations are ideal for use on lighter traffic routes.

"But in the case of a country with the telecommunications traffic demands of Bahrain, a large dish installation is essential in spite of the greatly increased cost and associated civil engineering works."

The project is due for completion by the end of next year. Manufacturers in Canada, Italy, Japan, Britain, the United States and West

Germany were invited to tender for the contract.

Mr Leighton said the new dish — the old one will continue to function — was part of a large capital investment by Cable and Wireless over the next five years in Bahrain.

The new dish will be the first of its type ordered by Cable and Wireless for four years. It will bring to a total of 33 the number of earth stations around the world in which Cable and Wireless, a British government owned company, has been involved as partner, owner, manager or consultant.

TELECOMMUNICATIONS DEVELOPMENT PLANS DISCUSSED

Teheran IRAN TRADE & INDUSTRY in English Apr 78 p 42

[Text]

In the Budget estimates for the year 2537 (1978-79), allocations have been made for an improved communications network for domestic use as well as for the outside world.

The programme for city and inter-city telephones will provide all facilities possible for a satisfactory telephone system for communication within city limits as well as for intercity use. The main features of the programme are as follows:

\*\* Automation telephone switchboards in present use will continue to provide service while renovations will be undertaken, when necessary. There are at present 850,000 automatic lines in use as well as 35,000 lines based on the magnetic system.

\*\* 170,000 new lines based on the automatic system of telephone communications will be put into service.

\*\* Preliminary operations to continue on the expansion of the country's telephone network to meet local needs for the next 25 years and for providing lines to new buildings to be constructed in the next ten years.

\*\* Work to continue on making intercity lines automatic and to expand this network to cover a wider area.

\*\* To speed up telephone, telegraph and microwave communications and to make them as foolproof as possible.

\*\* Providing the preliminary requirements of a telephone system to serve motor cars and ships.

\*\* Widening present microwave links to cover a greater area and to improve the functioning of this system.

\*\* To acquire an independent satellite communications system to serve the country's internal demands in this respect.

\*\* New telephone lines to be laid underground and provided overhead to open up a wider network of such lines.

\*\* To provide automatic telephone communications with as many countries of the world as possible. This will be implemented as follows:

— About 450 cables will be laid to facilitate greater possibilities in the field of international communications.

— The earth station at Assadabad (Antennas 1 and 2) will be equipped more comprehensively to cover 760 cables.

— Automatic telephone lines to connect Iranian cities to a wider area overseas as well as to connect all Iranian provinces to one another.

— Another earth station to be established just outside Tehran using Antenna No. 3

There are also plans for the extension of the telegraphic network to provide wider possibilities for the use of this facility for internal as well as external communications.

Speaking before the Parliament Budget Committee, the Minister of Posts, Telegraphs and Telephones, Karim Mo'tamedi, said that Iran will have 2,230,000 telephone lines by the Sixth Development Plan in 1983. He added that already a number of contracts have been entered into for hardware and cable networks inside and outside of Tehran and in the provinces and that the Telecommunications Company of Iran would further extend international links.

**SATELLITE "SYMPHONY"** : The telecommunications satellite "Symphony" was officially inaugurated at 1930 hours on February 1 with an audiovisual dialogue between His Imperial Majesty the Shahanshah Aryamehr, President Valery Giscard d'Estaing of France, and President Walter Scheel of the Federal Republic of Germany. The satellite, which was built as a joint Franco-German project, has relay stations in both Tehran and Shiraz.

In a message to President Giscard d'Estaing and President Scheel, the Shahanshah expressed the cordial greetings of himself and of the Iranians to the friendly German and French nations. He said that the satellite communication put a new emphasis on an old truth - friendship and cooperation among the three nations, to which modern technology had opened a new chapter.

The Shahanshah further said that the Symphony satellite is a manifestation of the closeness of East and West. He hoped that the closeness would go beyond its bound and that the phenomena of technology would become a vehicle for lasting friendship and understanding among all nations.

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IRAN

#### BRIEFS

IRANIAN-INDIAN CULTURAL AGREEMENT--The joint Iranian-Indian Cultural Commission, after 3 days of discussions and studies culminating in the signing of a program of cultural exchanges between the two countries, ended its work in Teheran this morning. The Iranian-Indian Cultural Exchanges Program, which will cover the years 1978-1980, encompasses the areas of arts and culture. Archaeology, science and higher education, education and training, radio and television, information and tourism, sports for children and young people and health and social welfare in the two countries. Throughout the period when the Iranian-Indian Cultural Exchanges Program is being implemented the two countries will also have extensive cooperation in the field of exchanging educational and health experts, university professors, scientists and writers, journalists, students, artists, news and information, educational and training scholarships and in publishing books on Iranian and Indian culture. [Text] [Teheran Domestic Service in Persian 0900 GMT 22 Apr 78 LD]

CSO: 5500

## SUDAN

### BRIEFS

NEW BROADCASTING SERVICE--The fourth channel of the Radio of the Democratic Republic of the Sudan will commence broadcasting during the new financial year after studies on it have been completed and the equipment imported. The channel will be allocated to the People's Broadcasting Service. Programs for children, women, cooperatives, workers, farmers, families, regular forces, local bulletins and commercials will be broadcast on it over a transmission span of 10 hours, from 1400 until 2400 [1200-2200 GMT]. Programs in English and French will begin next July on the same fourth waveband, 393 meters. With the completion of this channel, the Radio of the Democratic Republic of the Sudan will have four broadcasting services namely the general program, the Voice of the Nation, the Voice of Music, and the Voice of the People Broadcasting Service, in addition to the Holy Koran and Expatriates' Broadcasting Services. [Text] [Omdurman Domestic Service in Arabic 1300 GMT 17 May 78 LD/EA]

CSO: 5500

## ANGOLA

### DIRECTOR GENERAL DISCUSSES ROLE OF TELECOMMUNICATIONS

Luanda JORNAL DE ANGOLA in Portuguese 18 May 78 pp 1, 6

[Text] International Telecommunications Day was declared in Luanda by the leaders of the Secretariat of State for Communications and by those of the CTT [Posts, Telephone and Telecommunications of Angola], who held a press conference late yesterday afternoon at the Anibal de Melo Center.

This date recalls that of 17 May 1865, when, at the conclusion of the Paris Telegraphic Conference, the International Telegraphic Union was established, which, in 1932, became the International Telecommunications Union.

During the meeting with the journalists, information was given concerning the current situation of telecommunications and posts in Angola, efforts being made to reactivate sectors paralyzed during the second war for national liberation, work in progress and projects planned for the further development of telecommunications and posts.

Before the CTTA leaders gave an overall account of their activity, Director General of Telecommunications Bessa Victor, representing the Secretariat of State, spoke of the "importance and significance of telecommunications as a factor of a country's economic and social development and as a fundamental element in narrowing relations among peoples," stating at a given point:

"We, in our country, did not want to let this day go by unnoticed, and we are here to set this day aside. Within the international context and in accordance with directives issued by the MPLA-Labor Party, the People's Republic of Angola is already assuring its control of the telecommunications media with the outside world.

"It is developing a policy of direct connections among countries and is promoting a tie-in with the Pan-African Telecommunications Network (PANAFTEL)--in short, independence in the telecommunications sector also.

"In the national context, telecommunications are now playing an extremely important role. In a territory as vast as ours, the only way to be



"permanently in touch, to contact each other, is through telecommunications, whether it be by telephone, telegraph, telex, radio or television. Our party's socialist option imposes a planned economy which, in turn, requires a permanent flow of information, and this is possible only through telecommunications."

#### Increase in CTTA's Activity

Galileu Palhares, union representative of the CTT [Posts, Telegraph and Telephone], then spoke in detail concerning the organization and needs of the workers. He stressed the accomplishments that had been made and the objectives still to be reached, pointing out "the increasing productivity, which has been publicly recognized and is showing up in an increase in the volume of mail, telephone calls and telex communications, benefiting the Angolan working class through increased income used to improve the people's welfare."

Nevertheless, he made it a point to recognize some of the deficiencies that still exist, stating: "The current CTTA operators, for known reasons, are largely inexperienced and, hence, at times, there are omissions and mistakes, which will be corrected in due time and which, for the moment, have been understood by the people in general. In any event, there is a need to discipline users of communications media and establish criteria that will cause them to remain within the bounds of legality, thus enabling the state to collect the rates which are rightfully due it."

Galileu Palhares further stated: "Let us leave the question of transportation until last in order to make an appeal to the Ministry of Transportation, since, as is known, the CTTA functions throughout the Angolan state and we need to have vehicles in all provinces and cities. With the aid of those vehicles, our experts move from place to place to repair damage to the VHF [Very High Frequency] network, or to the terminals of the HF [High Frequency] networks, to repair aerial systems, or to repair telephone cables, or even to transport telephone operators, who carry on conversations at the national and international levels 24 hours a day."

#### Telepostal Stations Reopened

In turn, Luis Saraiva, director of the Center for Postal Exploitation, spoke of the sector he directs, stating at a certain point:

"Any reference to the current situation will relate back to the year 1975, during which the postal and telecommunications sector was hard hit. As a result of the war being waged at that time, experienced personnel left the first, second and third class stations, resulting in their being shut down; that gave rise to the practical and real difficulties that placed the efficiency of communications throughout the country in grave danger."

"It is known that not all stations are open. And this is due to the serious difficulties we encountered relative to the acquisition of telepostal equipment in the nature of furnishings--safe-deposit boxes, bags, scales, rubber stamps, stamps denoting the day and so on.

"But everyone can see that in the urban centers connected by aerial and land routes--since such contacts are essential for the success of the CTTA--the telepostal presence is already a reality. And through a survey made recently, we know the places in which the first, second and third-class stations are and can be installed.

"Given the difficulties facing us, particularly in reference to the new installations, and other difficulties, we are thinking of restoring third-class stations to their former status, under the leadership of municipal and communal commissioners insofar as possible and as soon as conditions permit."

Luis Saraiva then enumerated the places where CTTA stations currently exist, including a considerable number of cities in some provinces. And "due to a lack of statistical data concerning the volume of postal correspondence," he cited the level of income of the last three years, which makes it possible to verify the progress made since the sharp decline of 1976. Thus, for example, the sale of stamps, which, in 1975, rose to about 40 million kwanzas, dropped in 1976 to 13 million, and last year it was 26 million. The returns from telecommunications are another example: they amounted to 367 million kwanzas in 1975 and 198 million in 1976 but rose to 259 million in 1977.

#### UNDP Collaboration

"Thus," he added, "it happens that the returns are particularly promising in relation to 1977, despite all the setbacks that occurred in the exploitation of the postal system and telecommunications during the last two years.

"In conclusion, we may add, meanwhile, that the United Nations Development Program [UNDP] is assisting the telepostal services in Angola in order that they might satisfy local requirements and effectively contribute to the economic, social and cultural development of our country; the UNDP's aid is in the form of financing a project, already under way, aimed at reorganizing the accounting, administrative and postal-exploitation sectors as well as that concerned with professional training of personnel."

In closing the conference, CTTA's director general spoke in detail of the infrastructures of the telecommunications network at the national level, giving the reasons for the present irregularities in its operation and the plans scheduled for modernizing this entire sector. At the earliest opportunity, we shall have his words in detail.

It should be mentioned, meanwhile, that at the close of this press conference attended by some of the CTTA workers, a stamp exposition was inaugurated, open to the public.

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DETAILS ON CURRENT TELECOMMUNICATIONS SYSTEM

Luanda JORNAL DE ANGOLA in Portuguese 19 May 78 p 3

[Text] It can well be said that without telecommunications progress is very difficult. It would be impossible to communicate rapidly with any other part of the country or with foreign countries, with all the negative results that would entail. To speak specifically of our country, it also plays an important role in strengthening our national unity, so essential to the advancement of national reconstruction and the revolution.

During the press conference held in Luanda to celebrate International Telecommunications Day, the director general of the CTTA [Posts, Telephone and Telecommunications of Angola] outlined the current status of this sector and the plans under way, or scheduled, for its modernization.

On the basis of his explanations, we are giving our readers a brief picture of the current status and the future prospects of telecommunications.

The present radiocommunications system operating in our country is the VHF [Very High Frequency] type. It is so outmoded that spare parts are no longer manufactured for it. As can be imagined, it requires constant maintenance. Moreover, it does not have enough channels for automatic service.

With the wars for national liberation, this system was destroyed at certain points. CTT [Posts, Telegraph and Telephone] experts went about systematically repairing damage after damage, until they succeeded in normalizing all communications of this network, except that from Ndalatando to Uije, which remained in a complete state of disrepair.

A serious breakdown in the Canombe repeater left us without VHF communication with Lobito, Benguela, N'Gunza, Gabela, Porto Amboim, Lubango and Mocamedes. As that organization's stock of spare parts was entirely used up in repairing the network, it was difficult to obtain parts to repair the breakdown. The Posts and Telecommunications Services [SCT] now have the necessary material for repairing this line, and it is expected that this task will be initiated at the end of this month.

## Acquisition of Microwave System

With the aim of replacing the VHF system the CTT, back in the time of the transitional government, adopted a microwave system. After independence, Angolan technicians, trained on the subject of communications, modified the arrangement in order to serve the interests of the People's Republic of Angola better. The use of microwaves--a modern, multichannel system used throughout the world--will provide automatic communication with all provinces that have automatic telephone facilities, bring television to the capitals, provide for telex services, radio programs and the broadcasting of news and other items via telephonic-telegraphic channels. This change made it possible to increase the number of villages that, while not included in the previous plan, will also be served with telephonic-telegraphic communication.

## Status of Installation Project

Almost all technical equipment for installing the microwave system is now in Luanda. At the present time, the Ministry of Construction and Housing is putting up buildings for the terminal stations, beginning to establish access points for the repeaters and foundations for the turbines and water tanks, and put up the masonry for the prefabricated structures that will be installed to house the radio, multiplex and power equipment.

As is obvious, a country cannot have just one domestic system of communications. For example, good technique advises hooking up with a coaxial cable, an underwater cable, or a "troposcatter" arrangement in accordance with the natural conditions dictated by each.

At the present time, we are taking steps to install new short-wave receivers and transmitters throughout the country. Some are already installed, and, meanwhile, we are awaiting the arrival of more equipment in order that the secondary network, which will link the provincial capitals and, in turn, channel communications traffic toward Luanda, may be normalized.

With the aim of having an actual surplus in the microwave network and, also, a system that would provide for easier maintenance, it was decided to acquire a multichannel means of communication not requiring repeaters. To this end, we consulted the principal suppliers of this type of equipment inviting bids on a type of network that would make it possible to serve practically all our provincial capitals and contain enough channels for more rapid, easier and, if necessary, automatic connections. It has the advantage of requiring only one terminal in each city for its operation and, in addition to telephonic-telegraphic channels, will make it possible to transmit radio programs and, in a special case, television. To accomplish this, we intend to begin its installation yet this year.

The Luanda-Cabinda connection will be expanded in order to have automatic communication between these two cities. In turn, the CTT will also install a UHF [Ultra High Frequency] system that will make communication possible between that provincial capital and Brazzaville. This connection will make it possible for Angola to take part in the PANAFTEL [Pan-African Telecommunications Network] system during the current year without the need to pass via Europe in communicating with Africa.

#### Telex and Telephone Changes

At the present time in Luanda, we are expanding the telex exchanges to accommodate 200 additional subscribers and are installing an international exchange that will permit direct contact with the entire world. At the same time, there will also be a change in the current telex-exchange rates of Luanda and Huambo due to our having an exchange-memory system.

We are also thinking of taking steps this year to install another telex exchange in Lobito and automatic telephones in Malanje, Uije, N'Dalatando and Catumbela, linked with Belas, Viana and the expansion of the Huambo exchange involving 2,000 lines.

The CTT is also thinking of adding a transit exchange for Luanda during the current year to handle long-distance calls in the northern area; and, later, another will be acquired for Huambo. Through these two lines, Angolan subscribers will be able to communicate directly with the country's principal cities having automatic exchanges.

Meanwhile, we shall install the Luanda International Exchange, which will probably be completed by the end of this year and will, in the beginning, make it possible for all Luanda subscribers to dial directly to any other part of the world and, in turn, for subscribers outside Angola to reach the party they desire in Luanda without having to go through any telephone operator. This facility will not completely replace that type of international intervention, as some countries do not have automatic dialing.

There will, however, be instances in which subscribers do not want to use the international network; in this case, they can, as at present, request the aid of telephone operators to put through their call.

The installation of the microwave system, transit exchanges and the subscriber and Luanda international exchanges will permit all Angolan subscribers, connected to automatic facilities, to have access to the international network, since, logically, our network will be able to receive automatic calls from any part of the world.

As can be seen, the microwave project and that of the telephone exchanges are interconnected. Without that system, it will not be possible for us to communicate by telephone from one province to another. We shall be

able to make only local automatic calls. International calls will be made via satellite using two distinct routes.

One of the routes for automatic service will be that going via the international automatic exchange in Lisbon; the other will be via Rome. There is also a direct connection with countries using a very modern type of equipment called SPADE. This equipment makes it possible for Angola to communicate directly with any other country that has that same type of equipment.

#### Vocational Training for Equipment Maintenance

All these undertakings require well-defined and well-directed planning. In addition to the progress made in acquiring new equipment, we must also be prepared to provide the necessary maintenance for its proper operation and preservation. To this end, the CTT, in collaboration with the Secretariat of State for Communications, devised a plan for accelerated vocational training to be carried out with the international aid of the United Nations. This plan covers almost all technical specialized work handled by the SCT and calls for the training of 180 telecommunications workers over a period of two years. However, these technicians are not enough to keep our equipment in good condition. They are only half enough for our requirements.

The UNDP [United Nations Development Program] project will include the training of Angolan technicians, so that, after two years, the CTT may be able to operate the school. At the present time, a number of International Telecommunication Union advisers are working with Angolan specialists to devise programs and arrange classes in basic training for candidates to the course.

Meanwhile, a programming study was also made in the aim of computerizing the invoices of telephone and telex accounts. This type of work, that has been going on since last year, is practically finished. Within two months, the CTTA will have the telephone accounts in order, so that on the fifth of the following month, subscribers may pay their telephone bills covering the previous month.

This is one more improvement made by this organization in the aim of normalizing its collections and preventing subscribers from being in arrears causing them to be inconvenienced.

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## NIGERIA

### BRIEFS

INFORMATION COMMISSIONER ON CENSORSHIP--The Federal Commissioner for Information, Dr G. B. Leton, has stressed the need for journalists to understand government policies and actions and interpret them correctly to the public. He was speaking in Benin yesterday when inspecting NBC [Nigerian Broadcasting Corporation] and Nigerian TV offices and installations. The commissioner emphasized that it had never been the intention of the federal government to censor the press. On the proposed handover of NBC stations in the states to the state governments, the commissioner said that the interests of the affected [word indistinct] would be protected. [Text] [Lagos International Service in English 2100 GMT 13 May 78 LD]

NIGERIAN RADIO CORPORATION--A federal radio corporation is to be set up in Nigeria under the government's plan to restructure radio broadcasting. The corporation will have four linguistic zones--Lagos, Ibadan, Enugu and Kaduna. The details were given in Lagos today by the federal commissioner for information, Dr G. B. Leton, at a meeting he held with representatives of the Radio, Television, Theater and Allied Workers Union. He said that the present (?state) stations of the Nigerian Broadcasting Corporation, would be handed over to state governments, while Voice of Nigeria, the external service of the corporation, would become a separate department within the framework of the federal radio corporation but directly responsible to the director general. Dr Letin also said that no state station would be allowed to install a transmitter with a capacity above 10 kilowatts. He explained that the new arrangement was to insure that only the federal radio corporation would broadcast to the whole country, while the state stations would be limited to their area. Dr Letin said that details of staff movements and other related issues were being worked out. [Text] [Lagos International Service in English 2100 GMT 8 May 78 LD]

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USSR

'TASS' ANNOUNCES LAUNCHING OF 'MOLNIYA-1' COMMUNICATIONS SATELLITE

Moscow PRAVDA in Russian 4 Jun 78 p 3

[TASS Report: "'Molniya-1'"]

[Text] On 4 Jun 1978 a "Molniya-1" communications satellite was launched in the Soviet Union. The "Molniya-1" communications satellite is intended for operation in the system of long-range telephone and telegraph radio communication and also for transmission of USSR Central Television programs to points in the "Orbita" network situated in regions of the Far North, Siberia, the Far East and Central Asia.

The satellite was inserted into a high elliptical orbit with the following parameters:

- apogee, 40,837 kilometers;
- perigee, 457 kilometers;
- period of revolution, 12 hours 16 minutes;
- orbital inclination, 62.5 degrees.

In addition to the apparatus for transmission of television programs and for providing long-range multichannel radio communication, the satellite has on-board a command and measurement complex and also systems for orientation, orbital correction and power supply for the satellite.

According to the data received, the apparatus installed on the satellite is functioning normally. Communication sessions using the "Molniya-1" satellite will be conducted in accordance with the planned program.

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# FIRST DEPUTY MINISTER OF COMMUNICATIONS TALKS ON RADIO DAY

Moscow Domestic Service in Russian 1015 GMT 6 May 78 LD

[Talk by Vasiliy Aleksandrovich Shamshin, USSR first deputy minister of communications, 7 May Radio Day]

[Excerpts] Radio broadcasting, for us, is developing in an integrated manner. Constructions are underway and the capacities of the radio transmission networks of all broadcasting ranges are increasing at the same time as the expansion and increase in programs in the wired radio network. The distinguishing speciality of our system of radio broadcasting is the organic unity of program provision--the serving of the whole of the country with central and republican programs--and this has demanded the solution of a number of complex technical problems. The mastering of space has opened up new possibilities. In the coming years central radio programs will be transmitted to the remotest corners of the country by these space "bridges" and the quality will be very high.

The wired radio network is the largest in the world. The network of long and medium wave broadcasts, which has been developed over decades, is being enlarged by new and powerful transmitters, primarily in Siberia and the Far East. However, this is limited by the accelerated development of wired radio distribution and radio broadcasting on ultra short waves, which is the basis for local radio broadcasting and which is becoming increasingly popular.

The creation of a widespread network of intercity television channels has allowed for the unification of all the country's television stations into a single network. Every day there are link-ups between large cities in the USSR and also abroad via Intervision and Eurovision. An international system of space links with the socialist countries--Intersputnik--has been created which also uses the Soviet Molniya communications satellites. In the near future an exchange of program will be provided for with Pyongyang and a number of other capitals. The work done for the Olympics will expand even more the networks for exchanging TV and radio programs.

The whole of the TV broadcasting in the USSR comprises today more than 2,000 transmitting stations of varying capacities. All of them are linked

by a network of TV channels, by radio relay, cable and space lines of communications extending for hundreds of thousands of kilometers. Already 80 Orbita stations work via the system of Molniya and Raduga satellites. Thanks to this, since the beginning of 1977 there has been the provision of multitime zone television broadcasting of the first program of central TV--of Orbita-1, -2, and -3, the zone for receiving the second program of central TV has also been expanded in the north European part of the country, the Urals and Central Asia. For television viewers of Chukotka, Kamchatka, Sakhalin and Magadan oblast the Orbita-1 program is transmitted from Moscow with a difference of 8 to 10 hours in relation to Moscow time. For viewers in Krasnoyarsk Kray and further east to the Pacific coast it is Orbita-2 with a difference of 5 to 7 hours in relation to Moscow time. For TV viewers in Western Siberia, Altay and the republics of Central Asia and Kazakhstan it is Orbita-3 with a difference of 2 to 4 hours.

The central television first program is transmitted to all the TV transmitters of the European part of the country and the Urals. More and more towns receive the second central program by land line. Much work has been done recently to provide TV and radio broadcasting to the oil and gas workers of West Siberia; thousands of kilometers of radio relay lines and stations for space communications and dozens of TV and radio broadcasting stations have been built. Much work has been done for the BAM region. Powerful radio transmitters have been commissioned and a number of areas can receive TV. By 1982, without exception, the inhabitants of this area will be able to receive high quality TV and sound broadcasts.

The development of television and radio networks is being carried out according to a single state plan with the use of standardized equipment mainly supplied by Soviet industry. Party and administrative organs have been of great help in this, especially in Kemerovo, Tyumen and Amur oblasts and in Yakutia. In 1977 alone the zones of TV broadcasting were significantly expanded in Amur, Novosibirsk, Chita, Tyumen, Sakhalin and many other oblasts. The 1978 new and powerful TV stations will be commissioned in Krasnodar and Altay krays, in Sakhalin and Kamchatka, Volgograd, Tyumen, Chita and other oblasts. Thanks to the construction of Orbita stations last year the inhabitants of Nizhneangarsk and Severo-Kurilsk received television, as did Novaya Zemlya and Barguzin. This year they will be joined by Nogliki, Arkalyk, Mys Schmidt and other inhabited areas.

While in the past TV transmitters were built in densely populated areas, each serving tens and hundreds of thousands of inhabitants, they are now being built in much more sparsely populated areas, and in this sense the efficiency of each new station is reduced. Thus it became necessary to develop a new space system for TV transmission, with the use of artificial earth satellites with higher capacity relay apparatus and highly directional antennas aimed at the area to be served. Such a system is the Ekran system, which is to become operational in 1978. Its service zone will constitute some 9 million square kilometers and cover the territory of Central and Northern Siberia approximately from the Ob River in the west to the Lena River in the east.

The ground transmission network of this system will consist of many dispersed transmitters of varying capacity, mainly small capacity, equipped with relatively simple ground stations for the reception of TV programs from the Ekran satellite. The Ekran satellite itself is practically stationary in relation to the earth. For experimental purposes over 150 earth stations of the Ekran system have already been set up. In 1978-1980 the Ministry of the Communications Equipment Industry will increase the production of the Ekran system earth stations in conjunction with TV relays. They will be distributed, as before, by local communications authorities in accordance with a coordinated plan. The development of this network will make it possible to increase the number of central programs simultaneously received in densely populated areas of Siberia, to expand the zone of reliable reception, and to extend it to many newly developing areas.

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END